Linux System Information Cheatsheet

By Dejan Panovski • Updated on Nov 28, 2026

Commands that show Linux system information: distro and kernel version, CPU, memory, disks, hardware, firmware, uptime, and boot history.

These commands were checked on Ubuntu 26.04, Debian 13, and Rocky Linux 10. The Missing Commands card lists the packages to install when a tool is missing.

Distribution and Release

`/etc/os-release` exists on every current distribution and is the best first check.

`cat /etc/os-release`	Distribution name, version, ID, and codename
`grep PRETTY_NAME /etc/os-release`	One-line name, such as `Ubuntu 26.04.1 LTS`
`(. /etc/os-release && echo "$ID $VERSION_ID")`	ID and version for scripts; prints `ubuntu 26.04`
`hostnamectl`	OS, kernel, architecture, and hardware model in one view
`lsb_release -a`	Distributor, description, release, and codename
`lsb_release -cs`	Codename only, such as `resolute` or `trixie`
`cat /etc/debian_version`	Debian point release, such as `13.8`; Ubuntu prints its Debian base (`forky/sid`)
`cat /etc/redhat-release`	Release line on RHEL, Rocky, AlmaLinux, and Fedora

Kernel

The kernel version is separate from the distribution version.

`uname -r`	Kernel release, such as `7.0.0-31-generic`
`uname -a`	Kernel name, hostname, release, build, and architecture
`uname -srm`	Kernel name, release, and machine on one line
`cat /proc/version`	Kernel version and the compiler that built it
`dpkg --list 'linux-image*' | grep ^ii`	Installed kernels on Debian and Ubuntu
`rpm -q kernel-core`	Installed kernels on RHEL, Rocky, and Fedora
`cat /proc/cmdline`	Parameters the running kernel booted with
`lsmod`	Loaded kernel modules
`sudo dmesg`	Kernel messages; Debian and Ubuntu require root

CPU

`lscpu` collects the data from `/proc/cpuinfo` and sysfs into one summary.

`lscpu`	Architecture, model, cores, threads, caches, and flags
`LC_ALL=C lscpu | grep 'Model name:'`	CPU model, when reported by the system
`lscpu -e`	One row per logical CPU with its core, socket, and online state
`lscpu -C`	Cache sizes per level
`nproc`	Processing units available to the current process
`nproc --all`	All installed processing units
`grep -c ^processor /proc/cpuinfo`	Count logical CPUs
`uname -m`	Machine architecture, `x86_64` or `aarch64`; `uname -p` and `uname -i` usually print `unknown`
`dpkg --print-architecture`	Package architecture on Debian and Ubuntu, `amd64` or `arm64`
`getconf LONG_BIT`	Prints `64` on a 64-bit system
`sudo dmidecode -t processor`	Socket, speed, and CPU details from the firmware

Memory

Read the `available` column to see how much memory you can still give to new programs without swapping.

`free -h`	Total, used, free, and available RAM and swap
`free -h -t`	Add a `Total` row for RAM plus swap
`free -h -s 2`	Repeat every 2 seconds; stop with `Ctrl+C`
`grep -E 'MemTotal|MemAvailable' /proc/meminfo`	Total and available RAM in kB
`swapon --show`	Active swap files and partitions; no output means no swap
`vmstat -y 2 5`	Five 2-second reports on memory, swap, I/O, and CPU. `-y` skips the since-boot report.
`lsmem`	Memory block size and total online memory
`sudo dmidecode -t memory`	Installed modules with size, type, speed, and empty slots

Disks and Filesystems

`lsblk` lists block devices. `df` reports space on mounted filesystems.

`lsblk`	Disks, partitions, sizes, and mount points
`lsblk -f`	Filesystem type, label, UUID, and free space
`lsblk -d -e7 -o NAME,SIZE,MODEL,TRAN`	Whole disks with model and transport; `-e7` hides loop devices
`df -h`	Size, used, and available space per filesystem
`df -hT /`	Type and space of the root filesystem
`findmnt -T /etc/hosts`	Source and mount options for the filesystem containing the given path
`sudo blkid`	UUIDs and filesystem types for `/etc/fstab`
`sudo smartctl -i /dev/sda`	Drive model, serial number, and firmware; use `/dev/nvme0n1` for NVMe

Hardware and Firmware

`dmidecode` reads the firmware tables and needs root. Files in `/sys/class/dmi/id/` are readable by any user, except the serial numbers.

`sudo lshw -short`	Hardware summary grouped by class
`lspci`	PCI devices: graphics, network, storage, and USB controllers
`lspci -k`	PCI devices with the kernel driver in use
`lspci | grep -iE 'vga|3d|display'`	Graphics card
`lsusb`	USB devices
`cat /sys/class/dmi/id/product_name`	Machine model, no root needed
`cat /sys/class/dmi/id/sys_vendor`	Manufacturer, no root needed
`sudo dmidecode -s system-serial-number`	Serial number
`sudo dmidecode -t bios`	Firmware vendor, version, and release date
`[ -d /sys/firmware/efi ] && echo UEFI || echo 'UEFI not detected'`	Check whether Linux detects an EFI boot
`systemd-detect-virt`	Virtualization type, such as `kvm` or `qemu`; `none` on bare metal
`nvidia-smi`	NVIDIA GPU, driver version, and CUDA version

Uptime and Boot

How long the system has been running and how it started.

`uptime`	Current time, uptime, logged-in users, and load averages
`uptime -p`	Uptime in words, such as `up 2 days, 10 hours, 55 minutes`
`uptime -s`	Date and time of the last boot
`who -b`	Last boot time
`journalctl --list-boots`	Boots recorded in the journal, oldest first
`last reboot`	Reboot history; Debian 13 and Ubuntu 26.04 need `wtmpdb`, which starts recording at the next boot
`systemd-analyze`	How long the last boot took
`systemctl get-default`	Default boot target, `graphical.target` or `multi-user.target`
`w`	Logged-in users and what they are running

Hostname, Time, and Network

Identity and address details for the machine.

`hostname`	Hostname
`hostnamectl hostname`	Static hostname on systemd systems
`hostname -I`	IP addresses without interface names. Debian and Ubuntu omit loopback and IPv6 link-local addresses.
`ip -br addr`	Interfaces with their state and addresses
`timedatectl`	Time zone, local and UTC time, and NTP sync status

Summary Tools

These print a whole system overview in one command. `neofetch` is no longer packaged in Debian 13 or Ubuntu 26.04; use `fastfetch`.

`inxi -b`	Basic report: system, machine, CPU, graphics, network, and drives
`inxi -Fz`	Full report with IP addresses and serial numbers filtered out
`inxi -C`	CPU section only
`fastfetch`	Distro logo next to OS, kernel, CPU, GPU, memory, and disk
`fastfetch -l none`	The same summary without the logo
`hostnamectl`	Built-in summary on systemd systems; nothing to install

Missing Commands

Minimal and cloud images often leave these tools out. When you get `command not found`, install the package with `apt` or `dnf`. Package names match across distributions unless noted.

`lsb_release`	`lsb-release` on Debian and Ubuntu; not in the Rocky 10 base repositories
`lspci`	`pciutils`
`lsusb`	`usbutils`
`lshw`	`lshw`
`dmidecode`	`dmidecode`
`smartctl`	`smartmontools`
`last`	`wtmpdb` on Debian 13 and Ubuntu 26.04; `util-linux` on Rocky 10
`inxi`	`inxi` on Debian and Ubuntu; not in EPEL 10
`fastfetch`	`fastfetch`; from EPEL on Rocky and RHEL 10

Related Guides

Use these guides for worked examples and full output.

How to Check Linux Version	Distro and kernel version on any distribution
How to Check Your Ubuntu Version	Ubuntu release from the terminal and the desktop
How to Check Your Debian Version	Debian point release and codename
How to Check the Kernel Version in Linux	`uname`, `/proc/version`, and installed kernels
CPU Info on Linux	`lscpu`, `/proc/cpuinfo`, and core counts
How to Check Memory Usage in Linux	`free`, `top`, and `/proc/meminfo`
List Hardware in Linux	`lsusb`, `lspci`, and `lshw`
lsblk Command in Linux	Block devices, filesystems, and UUIDs
smartctl Command in Linux	Drive identity and SMART health
df Cheatsheet	Disk space and inode usage